

REMARKS

The examiner has objected to the drawings because they do not show a software based interrupt. Respectfully, applicant disagrees. Interrupt 160, as shown in Figure 7, depicts either hardware or software based interrupt. The Figure is schematic and applicant has amended the written description at page 8 to more clearly set forth that the interrupt is hardware or software based.

Claims 1-5 and 7-12 are rejected as unpatentable under 35 U.S. U.S.C. 103(a) over Figure 2 in view of McDowall 5,528,262. It is the examiner's position that in Figure 2 a method of controlling a display, comprises connecting a display controller to a CPU and to the display, the CPU having a progressively organized pixel memory and scanning the pixel memory using the control the scanning "?". The examiner acknowledges that Figure 2 does not show the controller is capable of providing an interrupt nor does it show scanning the pixel memory using the interrupt to control the scanning thus providing scanned data to the display in a color field sequential mode. The examiner also fails to acknowledge that in Figure 2 the display 100 is specifically said to be a progressive scan display, that is a display in which pixel has three elements typically red, green and blue as described in paragraph 30. Not only does Figure 2 fail to teach a controller capable of providing an interrupt, it does not show or suggest scanning the pixel memory to provide scanned data to the display in a color field sequential mode. Even if McDowall taught using the interrupt to control the scanning, Figure 2 is still missing a significant limitation of the claims.

Independent Claims 7, 8, 9, 10 and 11 all include these limitations.

In addition to the failure of Figure 2 to show or suggest providing scanned data to a display in a color field sequential mode from progressively organized pixel memory, McDowall is both non-analogous and fails to show or suggest an interrupt.

McDowall is an example of the prior art as described in paragraphs 8 and 9 over which the invention is an improvement. McDowall uses a frame buffer to temporarily store image data so that it can be displayed on a color field sequential display.

As described by McDowall at Column 6, Lines 7-12 and 41-44, McDowall stores only a single line of video rather than an entire frame but the principle is identical. Because McDowall provides a buffer, there is no need for using an interrupt to control the scanning of progressively organized memory to provide a color field sequential drive signal. This is the reason why the examiner cannot find any mention of an interrupt in McDowall, the interrupt isn't present and more importantly isn't needed.

The examiner hasn't described any motivation for combining the teachings of Figure 2 and McDowall and in fact not only is there no such motivation in the art, the combination would make no sense. Figure 2 uses progressively organized memory to drive a progressive scan display. McDowall uses field sequential organized memory (see Figure 2a at 202 and Figure 2b at 250) to drive a color field sequential display. Not only

does McDowall fail to teach an interrupt, McDowall relates to an entirely different arrangement from that described and claimed by applicant.

For purposes of this response, applicant doesn't separately argue the patentability of Claim 4, 5 and 12 but reserves the right to do so later.

As to Claims 7-11, the examiner admits that Figure 2 fails to disclose the controller having an interrupt, fails to disclose scanning the data to provide an image of a first primary color on the display; fails to disclose using the interrupt to initiate in sequence formation of second and third primary images on completion of the first primary color image thus forming a multicolor image, and using the interrupt to initiate formation of further images after formation of the multicolored image. The examiner relies on McDowall for these elements. Again, there is no motivation or reason and any of the prior art combine McDowall with the arrangement shown in Figure 2. In McDowall, the display is a color field sequential display not a progressive scan display as in Figure 2. In McDowall the data are arranged in sequential color format not progressive format. In McDowall there is no mention of an interrupt nor is there any reason to provide an interrupt. Figure 2 in McDowall are examples of two distinctly different approaches and neither one shows or suggests any reason for combining with the other and the examiner has suggested no motivation. Any suggestion to make the combination comes only from applicant's invention.

Applicant does not completely understand the reference to Claims 2 and 3 at the bottom of page 6 of the Office Action. As already described, applicant respectfully submits that McDowall does not show an interrupt system. Applicant agrees that McDowall does not explain how blanking is done and further, McDowall does not even mention using an interrupt.

Claims 6 and 13 are rejected as unpatentable over Figure 2 in view of McDowall and in further view of Comerford. Applicant relies, at present, on the distinctions already made with respect to Claim 1 for the patentability of these claims. As to Comerford, the reference does not relate to displays at all. The suggestion that it would have been obvious to combine Comerford's D/A converter into the system of Richards (sic) is disputed for the same reasons set forth in the response of the first Office Action namely, Comerford is in no way related either to Figure 2 or to Applicant's invention. Comerford describes apparatus for controlling the drive current for a light emitting semiconductor device of the type used in injection lasers. There is nothing in Comerford that relates in any way to displays of any sort, let alone to color field sequential displays. Rather, as Comerford puts it, the prior art circuits [for controlling the bias level of an injection laser] are inherently difficult to monolithically integrate since they include circuit elements such as capacitors and inductors, which are inherently difficult to integrate. An object of Comerford is to provide a bias current control circuit for an injection laser, which can be readily integrated monolithically. Applicant finds nothing in Comerford or in Figure 2 that would suggest using the digital to analog converter of Comerford in the Figure 2 display. Comerford does not relate to displays and Figure 2 does not relate to injection lasers. Figure 2 doesn't even use a light emitting semiconductor devices in its display,

but rather uses spatial light modulators which use micro mirrors to achieve greater brightness than LCD based projectors with the same light source.

It is axiomatic that the suggestion to combine two references must come from the prior art, either from the references themselves or from some other source. In this case, nothing in the references supports the combination and the Examiner has not suggested any other source for the suggestion.

Each of the new rejections having been overcome, reconsideration and favorable action are requested.

Respectfully submitted,



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Applicant: Furman, Geoffrey Giles/Docket:
85941.000023
Title: CONTROL OF A LIQUID CRYSTAL DISPLAY

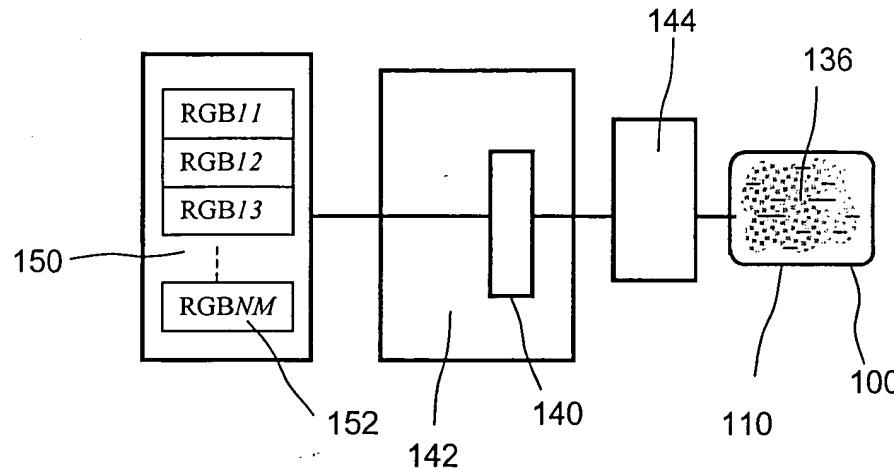


Fig. 2

prior art

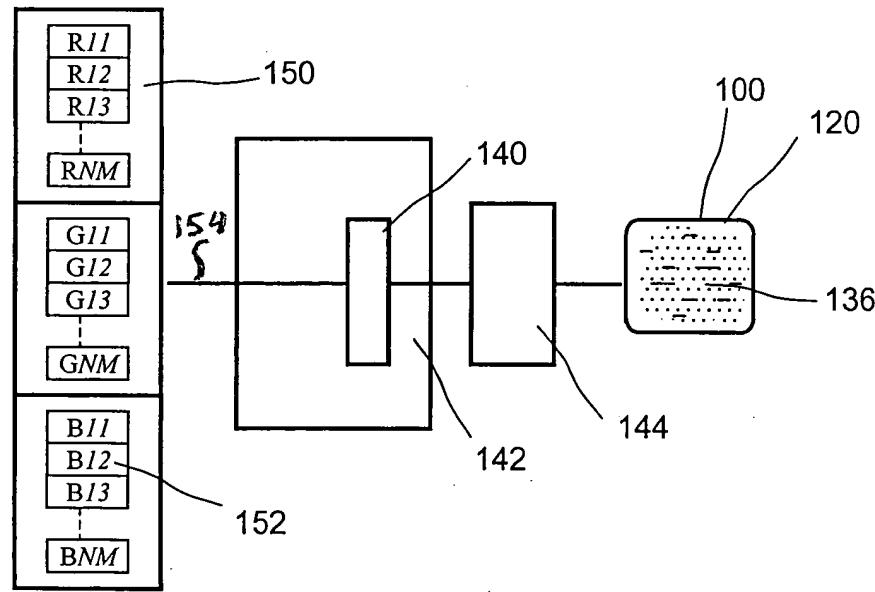


Fig. 3